PKG & QAP
A-A-20097D
4 December 2003
SUPERSEDING
A-A-20097C
13 August 1997

SECTION C

This document covers hot sauce for use by the Department of Defense as a component of operational rations.

C-1 ITEM DESCRIPTION

PACKAGING REQUIREMENTS AND QUALITY ASSURANCE PROVISIONS FOR CID A-A-20097D, HOT SAUCE

Types.

Type I - Hot
Type II - Extra Hot 4x

C-2 PERFORMANCE REQUIREMENTS

A. Product standard. A sample shall be subjected to first article (FA) or product demonstration model (PDM) inspection as applicable, in accordance with the tests and inspections of Section E of the Packaging Requirements and Quality Assurance Provisions. The approved sample shall serve as the Product Standard. Should the contractor at any time plan to, or actually produce the product using different raw material or process methodologies from the approved Product Standard, which result in a product non comparable to the Product Standard, the contractor shall arrange for a new or alternate FA or PDM approval. In any event, all product produced must meet all requirements of this document including Product Standard comparability.

B. Shelf life. The packaged product shall meet the minimum shelf life requirement of 36 months at 80^{o}F.

C. Palatability and overall appearance. The finished product shall be equal to or better than the approved product standard in palatability and overall appearance.

SECTION D

D-1 PACKAGING

A. Packaging. One-eighth, 2, 3, 6, or 12 fluid ounces of hot sauce shall be packed in a glass bottle in accordance with good commercial practice. Each bottle shall be filled to not less than 1/2 inch nor more than 1 inch from the open end of the bottle. Screw caps shall be secured to the bottles with a band of plastic shrink film or plastic tape.

D-2 LABELING

A. Bottles. Bottles shall be labeled in accordance with good commercial practice and with the following:

(1) Name of product (letters not less than 1/8 inch high)
(2) Ingredients
(3) Date 1/
(4) Net Volume
(5) Contractor's name and address

1/ Each bottle shall have the date of pack noted by using a four-digit code beginning with the final digit of the current year followed by the three digit Julian day code. For example, 4 December 2003 would be coded as 3338. The Julian day code shall represent the day the product was packaged into the bottle.

D-3 PACKING

A. Packing. Glass bottles shall be packed in a fiberboard box conforming to RSC-L, grade V3c of ASTM D5118/D5118M-95, Standard Practice for Fabrication of Fiberboard Shipping Boxes. The box shall be fitted with partitions creating and individual cell for each bottle. Each container shall be securely closed in accordance with ASTM D1974-98, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

B. Packing for shipment to ration assembler. Not more than 40 pounds of product shall be packed in a fiberboard shipping container constructed in accordance with style RSC-L, class domestic, variety SW, grade 200 of ASTM D5118/D5118M-95 (2001), Standard Practice for Fabrication of Fiberboard Shipping Boxes. Each container shall be securely closed in accordance with ASTM D1974-98, Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes.

D-4 UNITIZATION

A. Unit loads. Boxes shall be arranged in unit loads in accordance with Type I, Class A or B of DSCP FORM 3507, Loads, Unit: Preparation of Semiperishable Subsistence Items.

D-5 MARKING

A. Shipping containers and unit loads. Shipping containers shall be marked in accordance with DSCP FORM 3556, Marking Instructions for Boxes, Sacks and Unit Loads of Perishable and Semiperishable Subsistence.

SECTION E INSPECTION AND ACCEPTANCE

The following quality assurance criteria, utilizing ANSI/ASQC Z1.4-1993, Sampling Procedures and Tables for Inspection by Attributes, are required. Unless otherwise specified, Single Sampling Plans indicated in ANSI/ASQC Z1.4-1993 will be utilized. When required, the manufacturer shall provide the certificate(s) of conformance to the appropriate inspection activity. Certificate(s) of conformance not provided shall be cause for rejection of the lot.

A. Definitions.

(1) Critical defect. A critical defect is a defect that judgment and experience indicate would result in hazardous or unsafe conditions for individuals using, maintaining, or depending on the item; or a defect that judgment and experience indicate is likely to prevent the performance of the major end item, i.e., the consumption of the item.

(2) Major defect. A major defect is a defect, other than critical, that is likely to result in failure, or to reduce materially the usability of the unit of product for its intended purpose.

(3) Minor defect. A minor defect is a defect that is not likely to reduce materially the usability of the unit of product for its intended purpose, or is a departure from established standards having little bearing on the effective use or operation of the unit.

B. Classification of inspections. The inspection requirements specified herein are classified as follows:

(1) Product standard inspection. The first article or product demonstration model shall be inspected in accordance with the provisions of this document and evaluated for overall appearance and palatability. Any failure to conform to the performance requirements or any appearance or palatability failure, shall be cause for rejection of the lot. The approved first article or product demonstration model shall be used as the product standard for periodic review evaluations. All food components that are inspected by the USDA shall be subject to periodic review sampling and evaluation. The USDA shall select sample units during production of contracts and submit them to the following address for evaluation:

US Army Research, Development and Engineering Command,
Natick Soldier Center
AMSRD-NSC-CF-F
15 Kansas Street
Natick, MA 01760-5018

One lot shall be randomly selected during each calendar month of production. Six (6) sample units of each item produced shall be randomly selected from that one production lot. The six (6) sample units shall be shipped to Natick within five working days from the end of the production month and upon completion of all USDA inspection requirements. The sample units will be evaluated for the characteristics of appearance, odor, flavor, texture and overall quality.

(2) Conformance inspection. Conformance inspection shall include the product examination and the methods of inspection cited in this section.

E-5 QUALITY ASSURANCE PROVISIONS (PRODUCT)

A. Product examination. The finished product shall be examined for compliance with the performance requirements in A-A-20097D and specified in Section C of the Packaging Requirements and Quality Assurance Provisions document utilizing the double sampling plans indicated in ANSI/ASQC Z1.4 - 1993. The lot size shall be expressed in bottles. The sample unit shall be the contents of one bottle. The inspection level shall be S-3 and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 1.5 for major defects and 4.0 for minor defects. Defects and defect classifications are listed in table I.

TABLE I. Product defects 1/ 2/

Category	Defect

Major	Minor	
		General
101		Product not type as specified.
		Appearance and color
	201	Hot sauce not red to reddish-brown liquid.
	202	Hot sauce not a smooth suspension of small particle size.
	203	Hot sauce stratifies and separates. 3/
		Odor and flavor
102		Hot sauce not a pungent odor.
103		Hot sauce flavor not well balanced and peppery.
104		Hot and aged sauce not pungent flavor of product prepared from fermented red pepper mash.

1/ Presence of any foreign materials such as, but not limited to, dirt, insect parts, hair, wood, glass, metal or mold, or any foreign odors or flavors such as, but not limited to burnt, scorched, rancid, sour, or stale shall be cause for rejection of the lot.

2/ Finished product not equal to or better than the approved product standard in palatability and overall appearance shall be cause for rejection of the lot.

3/ Minor separation which upon light shaking disappears and results in a uniform, relatively stable suspension is acceptable.

B. Methods of inspection.

(1) Shelf life. The contractor shall provide a certificate of conformance that the product has a 3 year shelf life when stored at 80°F. Government verification may include storage for 6 months at 100°F or 36 months at 80°F. Upon completion of either storage period, the product will be subjected to a sensory evaluation panel for appearance and

palatability and must receive an overall score of 5 or higher based on a 9 point hedonic scale to be considered acceptable.

(2) Net volume. The net volume shall be verified with the label on the commercial package. Product not conforming to the net volume requirement in Section D of this Packaging Requirements and Quality Assurance Provisions document shall be cause for rejection of the lot.

(3) Nonvolatile solids, salt, and acidity testing. The sample to be analyzed shall be a composite of eight filled and sealed bottles that have been selected at random from one production lot. The product shall be analyzed in accordance with the Official Methods of Analysis of AOAC, following methods:

Test	Method
Nonvolatile solids	925.45A 1/
Salt	941.13 2/
Acidity (as acetic acid)	920.174

The sample unit shall be one filled and sealed glass bottle. The lot size shall be expressed in bottles. The sample size shall be the number of sample units indicated by inspection level S-2. Test results shall be reported to the nearest 0.1 percent. Verification will be conducted through actual testing by a Government laboratory. Any nonconforming result shall be cause for rejection of the lot.

1/ Pre-dry to near dryness on steam bath before drying in a vacuum oven. Run at 65°C (149°F).

2/ Saturated potassium permanganate ($KmnO_4$) shall be used in lieu of 5 percent $KmnO_4$ solution.

(4) pH test. The sample to be analyzed shall be a composite of eight filled and sealed bottles that have been selected at random from one production lot. The product shall be analyzed for pH concentration in accordance with the Official Methods of Analysis of AOAC, method 981.12. The sample unit shall be one filled and sealed glass bottle. The lot size shall be expressed in bottles. The sample size shall be the number of sample units indicated by inspection level S-2. Test results shall be reported to the nearest 0.1 value for

pH level. Verification will be conducted through actual testing by a Government laboratory. Any nonconforming result shall be cause for rejection of the lot.

(5) Bite (Capsaicin) testing. The sample to be analyzed shall be a composite of eight filled and sealed bottles that have been selected at random from one production lot. The product shall be analyzed for bite in accordance with the Official Methods of Analysis of AOAC, method 995.03 or American Spice Trade Association Official Method 21.3. The sample unit shall be one filled and sealed glass bottle. The lot size shall be expressed in bottles. The sample size shall be the number of sample units indicated by inspection level S-2. Test results shall be reported to the nearest 10 Scoville units or 1 ppm. Verification will be conducted through actual testing by a Government laboratory. Any nonconforming result shall be cause for rejection of the lot.

E-6 QUALITY ASSURANCE PROVISIONS (PACKAGING AND PACKING MATERIALS)

A. Packaging.

(1) Filled and sealed glass bottle examination. The filled and sealed bottles shall be examined for the defects listed in table II. The lot size shall be expressed in bottles. The sample unit shall be one bottle. The inspection level shall be I and the AQL, expressed in terms of defects per hundred units, shall be 0.65 for major defects and 2.5 for minor defects.

TABLE II. Filled and sealed glass bottle defects 1/

Category		Defect
Major	Minor	
101		Broken or cracked bottle.
102		Plastic shrink film or plastic tape missing on screw cap.

TABLE II. Filled and sealed glass bottle defects 1/ continued

Category		Defect
Major	Minor	
103		Unclean bottle. 2/
104		Bottle has foreign odor.

105		Not packaged as specified.
	201	Label missing, incorrect or not as specified.
	202	Net volume less than 1/2 inch or more than 1 inch from the open end of the bottle.

1/ Any evidence of rodent or insect infestation shall be cause for rejection of the lot.

2/ Outer packaging shall be free from foreign matter which is unwholesome, has the potential to cause bottle damage (for example, metal filings) or generally detracts from the clean appearance of the bottle.

B. Packing.

(1) Shipping container and marking examination. The filled and sealed shipping containers shall be examined for the defects listed in table III below. The lot size shall be expressed in shipping containers. The sample unit shall be one shipping container fully packed. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0 for major defects and 10.0 for total defects.

TABLE III. Shipping container and marking defects

Category		Defect
Major	Minor	
101		Marking omitted, incorrect, illegible, or improper size, location sequence or method of application.
102		Inadequate workmanship. 1/
	201	More than 40 pounds of product.

1/ Inadequate workmanship is defined as, but not limited to, incomplete closure of container flaps, loose strapping, inadequate stapling, improper taping, or bulged or distorted container.

SECTION J REFERENCE DOCUMENTS

DSCP FORMS

DSCP FORM 3556 Marking Instructions for Boxes, Sacks and Unit Loads of

DSCP FORM 3507	Perishable and Semiperishable Subsistence Loads, Unit: Preparation of Semiperishable Subsistence Items

NON-GOVERNMENTAL STANDARDS

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 1974-98	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D 5118/D5118M-95 (2001)	Standard Practice for Fabrication of Fiberboard Shipping Boxes

AMERICAN SOCIETY FOR QUALITY (ASQ)

ANSI/ASQCZ1.4-1993	Sampling Procedures and Tables for Inspection by Attributes

AMERICAN SPICE TRADE ASSOCIATION (ASTA)

AOAC INTERNATIONAL	Official Methods of Analysis of the AOAC International